

OPC device 10, as a stylized perspective view of a cylindrical object including cylindrical sidewall terminating in top and bottom edges with full view of the bottom surface of the object, shown in red ink, subject to approval of the examiner. The reference numeral 12 is connected via a lead line to the bottom edge of the DUT 10 to identify the bottom area 12 which is described in the specification (pages 4-6, as amended). By this amendment, the reference numerals 10 and 12 designate different parts of the drawing, thereby to overcome the objection to the drawing.

Claims 1, 6-11, 15 and 18-21 were rejected under 35 U.S.C. 103 as being unpatentable over Herbert (US 5,352,329), Claims 2-5, 12 and 22 were rejected under 35 U.S.C. 103 as being unpatentable over Herbert in view of Roy (US 6,118,540), and Claims 13, 14 and 17 were rejected under 35 U.S.C. 103 as being unpatentable over Herbert in view of Lemmers (US 4,641,966) for reasons set forth in the Action.

Reconsideration of these rejections is requested respectfully in view of the amendment and argument herein.

Allowable subject matter has been noted in claims 16 and 23. Claims 16 and 23 have been rewritten in independent form so as to secure their allowance.

The position of the examiner is understood to be that the independent claims 1, 11 and 20 describe the invention in such broad terms, that the description is basically what a person does when he sees some liquid collecting on an object which has been wetted, and determines that the excess liquid is inappropriate. The examiner states further that it is

known how to build apparatus to perform this task automatically.

A feature of the present invention deals with the mode of analyzing data obtained from observation of the OPC device during a stage of the manufacture in order to determine that the device is acceptable, that the device is free of a defect. Observation is obtained by illuminating a bottom edge area of the OPC device, and by positioning an optical sensor to view the illuminated OPC bottom edge area, as is set forth in the claims. In accordance with the practice of the invention, the optical sensor provides a band of captured illumination having gray level picture data of distinguishable pixels which are darker pixels or lighter pixels, as is disclosed on page 6 of the present specification. The decision process, for determining the acceptability of the OPC device, proceeds by determining a ratio of the number of distinguishable pixels to the total number of pixels in the band for classifying the OPC device. This feature of the invention is not disclosed nor suggested by the cited references, whether considered individually or in combination. Accordingly, the independent claims 1, 11 and 20 have been amended to recite the foregoing feature, thereby to overcome the rejections under 35 U.S.C. 103, and secure allowance of these claims. The respective dependent claims of the independent claims 1, 11 and 20 are believed to be allowable also in view of their recital of further details of the invention.

Thereby, this amendment of the claims and the argument are believed to overcome the rejections under 35 U.S.C. 103 so as to secure allowance of the claims.

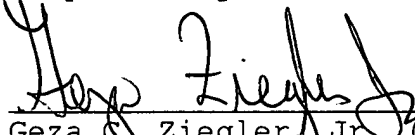
A typographical error is corrected in claim 6.

The foregoing amendment is believed to meet all the points raised by the Examiner so as to place the claims in condition for allowance. If any of the matters raised in the Action or any further matters have not been adequately resolved by this amendment, a telephone interview between Applicant's representative and the Examiner is requested in order to resolve any such outstanding matters.

It is submitted respectfully that all the claims are now in condition for allowance in that they patently distinguish over the art. Accordingly, a favorable action indicating such condition is earnestly solicited.

Please charge deposit account No. 16-1350 for any fee deficiencies with regard to the filing of this communication or credit any overpayment to Deposit Account No. 16-1350.

Respectfully submitted,

  
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11-4-02  
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CERTIFICATE OF MAILING

I hereby certify that the attached correspondence is being deposited with the United States Postal Service as first class mail on the date shown below in an envelope addressed to: Commissioner of Patents, Washington, DC 20231.

Cann Marsh  
Name of Person Making Deposit

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Application No.: 09/629,203



MARKED UP COPY OF THE CLAIMS BEING AMENDED

1. (Amended) A system for optically sensing manufacturing defects in OPC devices, the system comprising:

an illumination source for illuminating the OPC device;

at least one optical sensor positioned to view the illuminated OPC, wherein the optical sensor provides a band of captured illumination with gray level picture data of distinguishable pixels which are darker pixels or lighter pixels; and

a controller connectable to the optical sensor for determining a ratio of the number of distinguishable pixels to the total number of pixels in the band, the controller comprising a threshold detector for sensing, based on said ratio, bottom edge wipe (BEW) manufacturing defects in the OPC device.

6. (Amended) A system as in claim 1 wherein the controller is associated with a data storage area, wherein the data storage area may be used to store predetermined threshold values and classification result [;] .

11. (Amended) A method for optically classifying residues on at least one bottom edge area of a OPC, the method comprising the steps of:

illuminating the at least one bottom edge area of the OPC;

capturing reflected illumination from the at least one illuminated bottom edge area of the OPC device, the step of capturing providing a band of captured illumination having gray level picture data of distinguishable pixels which are darker pixels or lighter pixels;

comparing the captured reflected illumination with at least one threshold level, the step of comparing including a step of determining a ratio of the number of distinguishable pixels to the total number of pixels in the band; and

classifying the at least one bottom edge area of the OPC device based upon the comparison of the captured reflected illumination with the at least one threshold level.

16. (Amended) [A method as in claim 15 wherein] A method for optically classifying residues on at least one bottom edge area of a OPC, the method comprising the steps of:

illuminating the at least one bottom edge area of the OPC;

capturing reflected illumination from the at least one illuminated bottom edge area of the OPC device;

comparing the captured reflected illumination with at least one threshold level; and

classifying the at least one bottom edge area of the OPC device based upon the comparison of the captured reflected illumination with the at least one threshold level;

wherein the step of comparing the captured reflected illumination with at least one threshold level further comprises the step of comparing the captured reflected illumination with a predetermined pixel count; and

the step of comparing the captured reflected illumination with a predetermined pixel count further comprises the step of comparing the captured reflected illumination with a predetermined gray level pixel count.

20. (Amended) A method for optically discriminating an Organic Photo Conductor (OPC) device, the method comprising the steps of:

illuminating a bottom edge area of the OPC device;

positioning an optical sensor to view the illuminated OPC bottom edge area, the optical sensor providing a band of captured illumination having gray level picture data of

distinguishable pixels which are darker pixels or lighter pixels; and

providing a controller connectable to the optical sensor, the controller having a threshold discriminator that determines a ratio of the number of distinguishable pixels to the total number of pixels in the band for classifying the OPC device.

23. (Amended) [A method as in claim 20] A method for optically discriminating an Organic Photo Conductor (OPC) device, the method comprising the steps of:

illuminating a bottom edge area of the OPC device;

positioning an optical sensor to view the illuminated OPC bottom edge area; and

providing a controller connectable to the optical sensor, the controller having a threshold discriminator;

wherein the step of providing the controller connectable to the optical sensor further comprises the steps of:

providing a gray level band discriminator;

comparing the ratio of a number of pixels within a predetermined gray level band to the total number of gray level pixels to a predetermined ratio; and



classifying the OPC device as acceptable, non-acceptable, or quasi-acceptable based upon said comparison.